

# "Bug of the Month"

Dedicated fly fishers know that Chironomids are a staple food of trout in still and slow-moving waters of the Pacific Northwest. Commonly known as midges, all life stages of Chironomids serve as food for trout and other surface feeding fish.

**WHAT DO THEY LOOK LIKE?** Chironomid midges go through four life stages: egg, larva, pupa, and adult. Adults range from one mm to one inch long, depending on the species, and have slender legs and narrow, clear wings (Figure 1). Adults are often mistaken as mosquitoes, however they lack the long proboscis that mosquitoes use to pierce the skin to feed on blood. Adults live only a few days to several weeks and will feed on honeydew or other natural sugars or not feed at all. Eggs may be deposited singly, in irregular or regular masses, or in strings on the surface or in the shallow edges of a lake or pond or on aquatic vegetation. Larvae have segmented bodies that are long, slender, and worm-like, ranging in length from about 2 mm to 1½ inch long (Figure 2). Most species have a hemoglobin-like substance in their body fluids and are called "bloodworms" cause of their pink or red color. The larval stage may last from two weeks to four years, depending on species, temperature of the water, and food availability. Duration of the life cycle ranges from one generation per two years or several generations per year.



Figure 2. Chironomid larva. Photo by Mark Nelson.

**WHAT DO THEY DO?** Larvae occur in all types of habitats, including rivers, streams, lakes, ponds, water supplies, and sewage systems. There are also some species that live in marine habitats, especially in the inter-tidal zone and in estuaries where there is an abundance of disintegrating algae. Many species construct fragile tubes composed of algae, fine silt, or sand grains cemented together with a salivary secretion. These tubes are open at both ends and a current of water is kept passing through by vigorous undulations of the body. Larvae primarily feed on algae, aquatic plants, and organic detritus, but some are predators on other microorganisms. Locomotion consists of a series of creeping or looping movements, although some species are active swimmers. When pupae are ready to emerge as adults, they leave the bottom and slowly make their way to the surface of the water, making them extremely vulnerable to capture by trout. The biggest larval hatches in the northwest occur during April, May and June, but will occur throughout the year anytime the water isn't covered with ice.

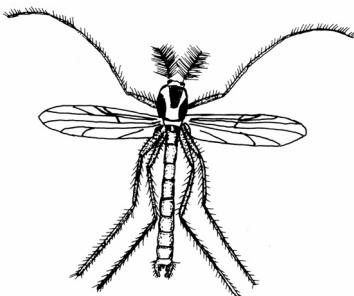


Figure 1. Adult Chironomid. Drawing by Merrill Sweet.

Adults occur commonly in mating swarms, especially near bodies of water and near lights at night. In some localities they swarm in such enormous numbers that they effectively discourage the use of such areas for recreation. Additionally, inhabitants of localities where large, synchronous emergences occur can develop allergies to the larval hemoglobin that is carried over from the larva to the adult and becomes airborne as the bodies of the adults decompose. Larval hemoglobin also can induce allergies in workers who process bloodworms into fish food for aquaria. Large chironomid emergences from polluted bodies of water are common and may cause local annoyance to humans, in addition to economic damage to machinery, paint finishes, automobiles, and airplanes.

## MANAGEMENT.

The best method to control Chironomids is through mechanical methods or biological control.

- Pond rotation, where settling basins are allowed to dry for 5 to 10 days, is very effective in reducing populations.
- Carp and *Tilapia* fish in basins or ponds are effective in reducing populations, but are not as effective in large lakes.
- Insect growth regulators can also provide control, but their effect is short lived.

**MORE QUESTIONS?** Please do not hesitate to give your "Bug Docs" a call at comm.: (360) 315-4450, DSN: 322-4450 or you can e-mail us at [ndveccmei@pnw.med.navy.mil](mailto:ndveccmei@pnw.med.navy.mil).